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Supporting People with Developmental Disabilities in Employment Settings Using Video Techniques

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Supporting People with Developmental Disabilities in Employment Settings Using Video Techniques

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Prompting Supports Using Handheld Devices

• Several Researchers have investigated the effectiveness of using handheld systems for prompting individuals with intellectual disabilities to engage in functional activities.

• Much of the research that has been done involves the presentation of picture/auditory prompts (Cihak, et al., 2007; 2008; Davies, Stock, & Wehmeyer, 2002a; 2002b; Furniss, et al., 2001; Riffel, et al., 2005)

Video-Based Instruction

• Video-based instruction has been used effectively as a technique for teaching functional skills.

• More and more researchers are investigating the use of video-based applications for teaching critical skills using portable, handheld solutions (Cihak, et al., 2010; Mechling, et al., 2009; Taber-Doughty, et al., 2008; Van Laarhoven et al., 2007; Van Laarhoven, Johnson, et al., 2009).

Sample video
Video Compliments of Woody Johnson
http://www.youtube.com/watch?v=zEHPRVAyNRM

Variations with Video-Based Instruction

• Type of Model
  • Self-modeling: Video self-modeling (VSM) is a technique that allows learners to observe themselves engaging in positive performances of a target behavior and has been used to teach skills such as math (Schunk & Hanson, 1989) language (Buggery, 1995; Buggery, 2005) and social skills (Buggery, 2005; Lonnecker, Brady, McPherson, & Hawkins, 1994).

Variations with Video-Based Instruction (cont)

• Other Models: Involves taping models other than the learner to demonstrate skills, or to serve as models in instructional videos.
  • Peer models have been used to instruct persons on community skills (Brammer, et al., 1993) vocational skills (Martin et al., 1992), social skills (Nikopoulos & Keenan, 2004), and cooking skills (Bidwell & Refined, 2004).
  • Other models have been used for a variety of skills including social and communication skills (Charlop & Milstein, 1989; Charlop-Christy et al., 2000; Conyers, et al., 2005; LeBaron, et al., 2003), daily living skills (Van Laarhoven & Van Laarhoven-Myers, 2006), and community skills (Alcantara, 1999; Ayres & Langone, 2002).
Variations with Video-Based Instruction (cont)

- **Subjective Models**: With this approach, the learner watches the video as if they were completing the task themselves.

  - Typically, there is no model present, but rather, learners watch a video that shows what it would look like if they were completing the task.
  
  - Subjective models have been used for video instruction of various skills, including self-help skills (Norman et al., 2001), daily living skills (Ayres et al., 2008; Shilley-Bernanou, Jurkacz, & Taubman, 2002; Van Laarhoven, Zurita et al., 2009), behavior regulation/transitioning from one activity to the next (Schreibman, Whalen, & Stahmer, 2000), and cooking skills (Graves et al., 2005).

Variations with Video-Based Instruction (cont)

- **Video Feedback** typically involves having the learner evaluate their own performance by watching themselves engage in the task, or by watching a positive example of someone performing the skill as an error correction procedure.

Variations with Video-Based Instruction (cont)

- **Self-evaluation Video Feedback**: Learners are shown a video of their own performance following task engagement (they are videotaped as they engage in the task and view the tapes of themselves following practice).

  - Self-evaluation feedback has often been part of a treatment package and has been used to reduce challenging behavior (Embrechts, 2000; Embrechts, 2002; Embrechts, 2003), to teach social communication (Malone & Mirenda, 2006; Thieman & Goldstein, daily living skills (Lasater & Brady, 1995), and shopping skills (Haring et al., 1987).

Variations with Video-Based Instruction (cont)

- **Error Correction Feedback**: Learners are shown a positive model of either themselves or someone else performing the skill correctly following errors (they watch a correct performance of the task if they make an error) (Goodson et al., 2007; Van Laarhoven, Van Laarhoven-Myers, & Zurita, 2007; Van Laarhoven, Johnson et al., 2009).

  - This form of video feedback has been used in conjunction with video modeling procedures, which involves having learners first watch a video-based skill sequence prior to engaging in the activity, or video prompting procedures, which involves having learners watch a “step” in a skill sequence prior to engaging in that particular step.

Variations with Video-Based Instruction (cont)

- **Video Modeling** refers to an instructional approach where learners view an entire video skill sequence prior to engaging in a task. This has also been referred to as “video priming” (Schreibman et al., 2000) or “video rehearsal” (Van Laarhoven & Van Laarhoven-Myers, 2006).

Variations with Video-Based Instruction (cont)

- **Video prompting** An instructional approach that involves showing each step in a skill sequence on video followed immediately by task engagement with that particular step (Cannella-Malone et al., 2006; Mechling, Gast, & Fields, 2008; Mechling & Gustafson, 2006; Mechling, Gast, & Seid, 2009; Sigafoos et al., 2005, 2007; Van Laarhoven, Johnson et al., 2009).

  - This requires that the learner has access to a television, computer, iPod, or portable DVD player in the environment where the skill is being practiced so that they can watch a clip, go perform the step, and then return to the device to complete the remainder of the steps.
Variations with Video-Based Instruction (cont)

- **Continuous Video Modeling** Continuous Video Modeling (CVM) is similar to a procedure called Simultaneous Video Modeling (SVM; Blum-Dimaya, Reeve, Reeve & Hoch, 2010) where a video is played while the individual is expected to “follow along” to model the behaviors. With SVM the video is only presented once whereby in CVM the video is played on a loop (Mechling, Ayres, Purrazzella, & Purrazzalla, in press).

- The continuous presentation of the video model allows individuals to work "hands-free” and to look at the video as needed and refer back to specific steps while completing the task.

How Can We Use Video-Based Instruction to Support Employment of Individuals with Disabilities?

- Use video modeling to have learners watch tasks before going to the employment setting (delayed or rehearsal strategy)
- Use video modeling to have learners watch each task while in the setting (with portable system)
- Use video modeling to maintain skills over breaks or vacations
- Use library of video models for learners to select preferred employment opportunities or activities

Sample Videos to Demonstrate Needed Supports

- Use video prompting with portable device to show learners steps or chunks of tasks while they are engaged in task in the employment setting
- Fade video prompts to picture/auditory cues
- Fade video prompts to video models
- Use a combination of picture prompts (for acquired skills) and video prompts (for difficult skills)

Additional Ideas:

- Videotape employees in a work setting to create a “video resume”
- Use video feedback for learners to evaluate their own performance or to correct errors
- Use videos to promote self-advocacy
- Use video models to highlight needed supports and to train support staff
  - (see example)
Needed Supports continued

Purpose of Presentation

- Video-based instruction has been used effectively to teach various skills to individuals with disabilities.
- Although researchers have demonstrated its effectiveness, few educators or vocational specialists are using this technology.
- The purpose of this presentation is to provide an overview of research and to demonstrate how video materials can be created using common software applications and how video-based materials can be presented on portable devices to support learners' employment and daily living skills.

Tips for Videotaping

- If creating video prompting sequences, videotape each step and press pause between each step.
- Use zoom to draw learner’s attention to salient features of task.
- Describe step while taping if possible. This will reduce time spent adding narration.

Creating Video Prompting Sequences with PowerPoint: Important Tips!!

1. Make a folder that contains the PowerPoint and save all video files in the same folder (this is critical if using 2007 or earlier versions).
2. Place a picture of the most salient feature of the step in front of the video clip and make its duration 1 sec.
3. For some learners, it might be necessary to have a “next” button to get them to advance slides.
4. Make sure to “Package” or “Publish” presentation when finished.

See Example Video Prompt Sequence Using PowerPoint
Tips for Creating Videos for iPods/iPads

- Use camera on device to create videos “on the fly” and edit using video editing apps
- If creating videos from other devices, remember that video files must be in mp4 format
- If creating video files with Microsoft products (Windows Movie Maker, etc.), it is necessary to convert the files using conversion software
- Flip video cameras and the FlipShare editing software allows the creation of video files in mp4 format
- iMovie and Pinnacle Studio also allows for the creation of video files that are iPod ready

Tips for 5th Generation iPods

- Fifth generation iPods allow for the creation of video playlists and video files can be organized by task
- The playlists and file names are text-based & it is helpful to number the files to make it easier for non-readers (e.g., 1 Get gloves, 2 Get cleaning supplies)
- Placing a “Press menu and go do” title at the end of each clip to allow the learner to pause the video playlist so that they can perform the step

Sample video of videos playing on 5th generation iPod.

http://www.youtube.com/watch?v=fTaKdq4Q2uA

Appeal of iPod Touch/iPad

- Has picture-based icons
- Icons can be selected by touch
- Larger video screen
- Ability to download applications
- Wi-Fi Capabilities

How to Organize Video Files in iTunes

- Creating video prompting list in iTunes

Additional Tips for iPods, iPads, and Portable DVD players when Working with Video Files

- Another way to create a video prompting playlist is to place titles between video clips telling the learner to "press pause" between steps (see clip). This can also be useful for DVD Players.
- Other alternatives are to use third party applications (e.g. Picture Scheduler, Video Scheduler, Keynote) or podcasts to organize files
Overview of Video Editing Using Windows Movie Maker or iMovie

- Let’s Edit a few files!

- Important! If using Windows Movie Maker, I highly recommend getting previous version (v 2.6) rather than using Windows Live


Sample Video of Picture Scheduler

- Picture Scheduler Beta Version
- Developed by Petr Jankuj (in collaboration with Toni Van Laarhoven, 2009)
- Website: http://www.jankuj.com/Picture_Scheduler.html
- Cost = $2.99

  - http://www.youtube.com/watch?v=b9INjX2KBBc

Sample Studies Using Picture Scheduler

- Tutorial for Picture Scheduler 1.54 is Available at:
  - Tutorial for Version 2.5

Vocational Skills

- Promoting Independence in Employment Settings: A Comparison of Delayed and Simultaneous Schedules

  - Purpose: The purpose of this study was to compare the effectiveness of two multimedia-based interventions for promoting independent task initiations and independent correct responding of a young man with autism who worked in a community-based employment setting.

  - Participant: The participant was a 19-year-old young man with autism and moderate intellectual disabilities who had been working at a local gym for approximately a year. He knew how to do most of the tasks, but was very prompt dependent and relied on the job coach to tell him when to perform each task.
**Employment**

- **Materials:**
  - Picture/auditory prompts were used for tasks that the student knew how to do, but that still required prompting for task initiation (e.g., moving chairs from table, getting cleaning supplies, etc.)
  - Embedded video files were placed within the skill sequence for a difficult task (i.e., sweeping all dirt into small pile, sweeping into dust pan, etc).

**Conditions**

Both interventions being compared involved the presentation of picture/auditory prompts presented on an iPod Touch as well as embedded video files for a difficult task; however, the schedule of presentation differed (one was a delayed presentation and the other was a simultaneous presentation).

- **Delayed or rehearsal condition:** The participant viewed the skill sequence on the iPod at school just prior to going to work.
- **Simultaneous or in vivo condition:** The participant viewed the skill sequence on the iPod while performing each task in the employment setting.

**Results**

- Both conditions resulted in improvement in independent task initiations and increased independence with difficult task.
- The delayed condition was the preferred condition for the participant and it was slightly more effective than the simultaneous condition for prompting independent task initiations.
- The simultaneous condition was somewhat more effective for increasing independent correct responding with the embedded difficult task.
- Student preferences are important to consider

**Daily Living Skills**

- The purpose of this study was to evaluate the effectiveness of using an iPod Touch to teach three young adults with autism and developmental disabilities daily living skills (i.e., cleaning a bathroom).
- In addition, this study also assessed the effectiveness of a fading procedure in which students progressed from a video prompting procedure (viewing video prompts prior to performing each step) to a picture/auditory prompting procedure.
Results

- The introduction of video prompts delivered on the iPod Touch was associated with increases in independent responding between baseline and intervention for all three participants; however, the results are tempered somewhat by the fact that participants had ascending baselines with prompting alone.

- Participants continued to demonstrate improvement when video prompts were faded to picture/auditory prompts, which suggests that the fading techniques were effective. In addition, participants also maintained high levels of independent correct responding during the post-test phase.

- Participants all stated that they liked using the iPod Touch and that they would like to use it again in the future. All three students stated that they preferred using the picture/auditory prompts.

- The iPod Touch appears to be an effective tool for increasing independent correct responding with sequenced tasks.

Purpose

- The purpose of this study was to compare two different types of prompting systems: printed schedules and iPod-delivered schedules, for promoting unprompted independent correct initiation and completion of scheduled activities.

- The rationale for this study was to determine:
  - 1) if the prompting systems were effective in increasing unprompted independent correct responding across scheduled activities,
  - 2) if one of the prompting systems resulted in higher levels of independent correct responding,
  - 3) the preferred prompting system for each participant.

Cooking

- The iPod Touch can also be used to present picture/auditory or video-based recipes to support independent meal preparation.
Participants

- Three young adults between the ages of 19-21 participated in the investigation. All had previous experience using the printed checklist schedules; however, they were not using them independently and relied heavily on prompting from staff.
  - Sam: Autism and Mild Intellectual Disability
  - Shirley: Moderate Intellectual Disability
  - Katrina: Emotional Disability; Pervasive DD with autistic features, OCD, & anxiety disorder (average IQ)

Conditions

- Independent Variables:
  - Printed Checklist Schedules that participants used throughout the school year
  - Picture/Auditory Schedules presented on an iPod Touch with the Picture Scheduler application (Jankuj & Van Laarhoven, 2009)
- Dependent Measure
  - Percentage of Unprompted Independent Correct Responses: Independent initiation and completion of scheduled activities during baseline, intervention, and preference phases.

Unprompted Independent Correct

- Sam: Baseline/Checklist, Intervention, Preference
- Shirley: Baseline/Checklist, Intervention, Preference
- Katrina: Baseline/Checklist, Nothing, Intervention, Preference

Results

- Two of the three participants performed better when the iPod was used, while the third student initially performed better with the checklist, and then better with the iPod as her comfort level with using it increased.
- After the iPod was introduced, all three participants increased their unprompted independent correct responding with the printed checklists over baseline levels.
- All three participants selected the iPod as the preferred prompting system; however, one student also stated that she would actually prefer no prompting system.
Leisure Skills

- Recently, we taught an adult male with Down Syndrome three leisure skills using the Picture Scheduler app.
- Results: The learner was able to independently paint a picture, listen to music, and take a digital picture.

Social Skills

- Video models of social skills or social stories can also be placed on an iPod or iPad to provide learners with the opportunity to view positive models of social skills prior to engaging in activities that may be problematic.

Demonstration of How Built-In Video Features of iPad Can be Used to Support Social Skills

- Example: Students with ASD or ID had school jobs where they had to deliver passes throughout the school.
- We compared video models of the task (using a peer model) with video feedback (videotaped student performance on iPad) and measured performance.
- See sample.

Demonstration of Keynote

- Example: We used Keynote on the iPad to present video prompting sequences to teach high school students daily living tasks.
- See sample.

Demonstration of Go Talk Now

- Example: We used Go Talk Now on the iPad and PowerPoint on HP Slate to present video prompting sequences to teach non-linear vocational tasks to students with ASD and ID.
- Sequences had built-in decision points and branching.
- Screen also had universally-designed features to allow learners to select their own supports.
- See sample.
Demonstration of Video Scheduler

- Another app that can be used to create video-based sequences is the Video Scheduler
- See sample

Demonstration of Educreations

- This is a screen capturing app that can be used to demonstrate academic or other tasks.
- See sample

What are Some Other Ways to Incorporate the Use of Video into Instruction?

Let’s Review Basic Video Editing

**To create video files for PowerPoint, video files must be in .wmv format.

**If embedding video files in 2007 PowerPoint, all video files must be placed in the same folder as the ppt and should be “packaged” or “published” before use.
Things to Know & Tips for Using iPods and iPads

- To load photos onto iPod, it helps to create a "photo folder" containing sub-folders with pictures of various tasks prior to syncing through iTunes.
- Videos can also be synced in this manner to create an organize video prompting sequence.

Adding Photos

- Once files are organized in a folder, sync with iTunes:
  1. Open iTunes & Plug in iPod
  2. Select iPod icon under "Devices" to open summary page
  3. Select "Photo" tab, and then select picture folder from "sync photos from" tab

Another Tip!

- In order to be compatible with the iPod, video files will need to be converted to .mp4 format.
- A free video conversion program can be found at:
  http://download.cnet.com/Any-Video-Converter/3000-2194_4-10661456.html
- Tutorial for Any Video Converter

Basic Steps for Converting Video Files with Any Video Converter

1. Once Any Video Converter is open, select "File", and then select output folder.
2. Go to "Profile" and select .mp4 format.
3. Select "Add Video" and then select all files to be converted from source folder or drag video files into conversion window.
4. Select "Convert"
5. Video files will then appear in MP4 folder and are ready for iPod.

Summary

- Video models and video prompts can be used effectively to improve and maintain work-related skills of individuals with disabilities.
- The needs and preferences of learners should always be considered when planning video-based instruction.
Questions?

- To obtain more information and access to video and print-based tutorials, please refer to:
  - http://denali.cedu.niu.edu/groups/videosupportsipods/
  - Or, contact Toni Van Laarhoven at: 
    - tvanlaard@niu.edu